Claims

What is claimed is:

1. An injection molding nozzle tip removably attachable to a nozzle housing, the nozzle tip comprising:

a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.

2. The nozzle tip of claim 1, wherein the junction is oriented substantially radially.

3. The nozzle tip of claim 1, wherein the junction is oriented at an angle from radial.

4. The nozzle tip of claim 1, wherein, the first portion is a nozzle tip retainer and second portion is a seal ring.

5. The nozzle tip of claim 1, wherein the first portion is a tip portion and the second portion is a cap.

6. The nozzle tip of claim 1, wherein the first portion is a retaining plate for a multi-probe nozzle tip, and the second portion is a seal ring.

7. An injection molding manifold bushing, comprising:

a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.

8. An injection molding nozzle valve stem, comprising:

a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.

9. The valve stem of claim 8, wherein the second portion is a tip end of the valve stem.

10. An injection molding nozzle housing, comprising:

a body portion, and a flanged portion fused to the body portion at a junction, the body portion and flanged portions being made of different materials.

11. An injection molding nozzle tip insert comprising:

a shank portion, and an end portion fused to the shank portion at a junction, the shank portion and end portions being made of different materials.

12. A method of making an injection molding nozzle tip component with a seal ring, comprising the steps of:

forming a first portion of the nozzle tip component from a first material;

forming a seal ring from a second material;

aligning the seal ring to the first portion at a junction whereat a surface of the seal ring abuts a surface of the first portion; and

fusing the first portion and the seal ring together at the junction.

13. The method of claim 12, wherein the fusing is done by electron beam welding.

14. The method of claim 12, further comprising the step of machining the fused first and second portions to a final configuration which removes material adjacent the junction.

15. The method of claim 12, wherein the aligning is done by an alignment feature formed on the first and second portions.

16. The method of claim 15, wherein the alignment feature is a ridge formed in one of the portions and a recess formed in the other portion, the recess receiving the ridge to align the portions.

17. A method of forming an injection molding nozzle tip component, comprising the steps of:

forming a first blank for a first portion of the nozzle tip component;

forming a second blank for a second portion of the nozzle tip component;

abutting the second blank against the first blank at a junction;

fusing the first blank and second blank at the junction; and

machining the fused first and second blanks to a configuration for the first portion and second portion of the nozzle tip component.

18. The method of claim 17, wherein the fusing is done by electron beam welding.

19. The method of claim 18, wherein the first portion is a tip retainer and second portion is a seal ring.